

**ABSTRACT**

The present invention relates to a method of quality assurance/quality control for high-throughput bioassay processes. The method includes generating a bioassay process model, and then comparing spectral data based on a combination of a biochip and a test serum to the bioassay process model to determine if the test sample and the bioassay process are producing acceptable data. Alternatively, the method may include comparing spectral data based on a combination of serum and diluents used in an electrospray process to the bioassay process model. If the bioassay process and test sample fall within the model, then the spectrum produced may be further analyzed.

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